Impacts Case Study - Hawaii

(comparison of effect of benchmark and treatment)

Conservation Effects Worksheet

Cropland - Sugarcane

(land use and crop)

Resource Setting: Kauai, Hawaii

Soils - Kapaa silty clay

Rainfall 74 inches

Elevation - 360 feet

Unique situation - field located on ridge top next to stream and Kapaia reservoir is located above the field

Conservation Treatment:

These following conservation practices were added to the benchmark system:

- Conservation Cropping Sequence -Scheduled Harvesting (328)
- Conservation tillage/no till (329)
- Cross slope farming
- Irrigation System - Drip (441)

Resource Problems Before Treatment:

Erosion is a problem; this is a highly erodible field. The field is close to a reservoir and stream. May have nutrient and herbicide problems.

IMPACTS	DECISIONMAKERS EVALUATION (+ / -)	Comment
Conservation Cropping Sequence Scheduled Harvesting (328)	+	Stop sediment from entering stream.
		Reduction of 63 tons/acre/year
Sheet and rill erosion reduced because stand of sugarcane will be established before high intensity rains occur.	-	May take several cropping cycles to get into the scheduled harvesting window of time.
- Before soil loss 64 tons/acre/year	-	If they have many fields with the scheduled harvesting treatment, they may not be able to do them all.
- After soil loss 0.8 tons/acre/year	-	Lower crop yield the first year because of the change in harvesting time, harvest crop early to get into the window.
Conservation Tillage (329) (minimum and no till) plus cross slope farming	+	Reduced sediment runoff
	+	Reduced consumption of fuel to use tractors.
- After soil loss 0.7 tons/acre/year		
- Reduction of sheet and rill erosion	+	Improved water infiltration and retention.
	-	On steep slopes tractor may slid or s;o[pr roll over attempting to go cross slope.
	-	Increased cost to modify equipment
Irrigation Drip (441)	-	Expensive to install an irrigation sysem
	+	Increases yields.
	+	Quicker cover of crop.
	+	Uniform crop growth; better crop growth.
	-	Water depletion from reservoirs.
	-	Tail water may contain chemicals used in the field.
Comments:		